PATENT ABSTRACTS OF JAPAN

(54) PROCESS CONTROL SYSTEM AND PROCESS CONTROL METHOD

(57)Abstract:
PROBLEM TO BE SOLVED: To provide a process control
system, which can significantly reduce the stable period of the
quality of products in the whole process while the yield of the
manufacture of the products is stabilized, and to provide a
process control method.
SOLUTION: The process control system adjusts processing
conditions in stages by a method wherein a simulation is
performed in every processing unit constituting a process to
perform a feedforward or a feedback between the processing
units, and the processing process control system is constituted
in a structure that the control system is provided with a
processing unit 101, which continues to finish a material 113 to
a product 115 by performing a work processing to the material
113, and a control part 105, which analyzes adequate
processing conditions on the basis of control information sent
from other control part, sets more adequate processing
conditions adaped to the status quo by simulating these
analyzed processing conditions and sends control information
(FF) including these processing conditions to the next stage of
a control part.
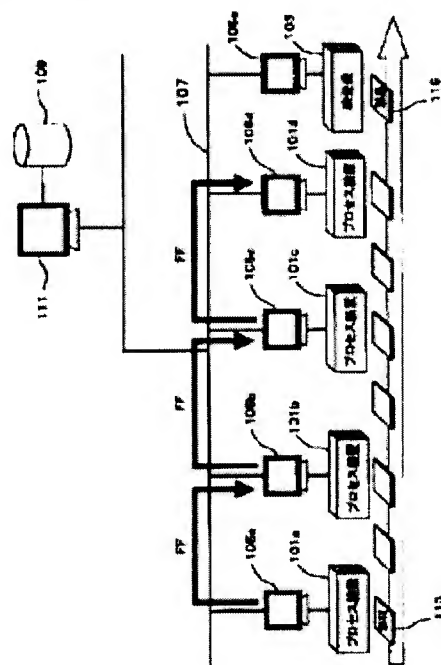
CLAIMS

[Claim(s)]
[Claim 1]A process unit with which a process condition according to a raw material was set up, and two or more sets of control sections which control a process condition set as said process unit are provided, respectively, Control sections are the process process control systems connected by communication line, When said control section points to change of a process condition to a pair of process unit, transmit to other predetermined control sections of a pair of, and control information about said process condition said predetermined control section, A process process control system directing to change a process condition to a pair of process unit based on received control information.
[Claim 2]When said control section receives control information from a storage parts store which memorized data about a state of a process unit, and data about setting out of a process condition, and other control sections, Analyzing parts which analyze a suitable process condition for a process unit used as a group using data memorized by control information concerned and said storage parts store, A process condition acquired by analyzing by said analyzing parts is compared with data memorized by said storage parts store, Said process condition has a simulation part which calculates an influence degree in said a pair of process unit, and it said analyzing parts, The process process control system according to claim 1 generating control information including optimal process condition after optimizing said process condition based on a calculation result of said simulation part.
[Claim 3]Said control section generates generation information expressed using course information which shows the number of control sections via which order information which shows order relation of said control section, and a control section besides the above, and said control information went, when transmitting control information to other control sections, The process process control system according to claim 1 or 2 giving the generation information concerned to said control information.
[Claim 4]When said control section receives two or more control information to which generation information was given, said analyzing parts, The process process control system according to claim 3 characterized by analyzing a process condition using data memorized by control information which judged a priority of control information in view of each generation information given to said two or more control information, and was judged that a priority is high, and said storage parts store.
[Claim 5]Said control section has a compensation information preparing part which creates compensation information which shows that control information was used by said analyzing parts, Claim 2 transmitting compensation information created by said compensation information preparing part by control section which transmitted said control information, a process process control system given in either 3 or 4.
[Claim 6]The process process control system according to claim 5, wherein said control section has compensation information analyzing parts which analyze received compensation information and store the analysis result in said storage parts store.
[Claim 7]Claims 1, 2, 3 and 4, wherein it has a factory administration server which manages said control section and said factory administration server is mutually connected by a factory administration server and a communication line which are provided in other process process control systems, a process process control system given in either 5 or 6.
[Claim 8]A process process control method comprising:
When it is a process process control method with which a control section manages a process unit with

which a process condition according to a raw material was set up, and said control section points to a pair of process unit so that a process condition may be changed, A control information transmission step which transmits control information about said process condition to a predetermined control section of other groups.
A process condition changing instruction step directed that said predetermined control section changes a process condition to a pair of process unit based on received control information.

[Claim 9]The process process control method according to claim 8 having a control information generation step characterized by comprising the following which generates control information.
An analysis step which analyzes a process condition using data in which said control section receives control information from other control sections, and is memorized by control information concerned and said storage parts store in control information transmitted by said control information transmission step.
A simulation step which calculates an influence degree in a process unit with which said process condition serves as said group using data memorized by a process condition acquired as a result of analyzing, and said storage parts store.
Process condition optimal at Kami who optimized said process condition based on a calculation result.

[Claim 10]Said control information transmission step generates generation information expressed using course information which shows the number of control sections via which order information which shows order relation of said control section, and a control section besides the above, and said control information went, The process process control method according to claim 8 or 9 transmitting control information which gave generated generation information to said control information to other control sections.
[Claim 11]When said control section receives two or more control information to which generation information was given, said analysis step, The process process control method according to claim 10 characterized by analyzing a suitable process condition using data memorized by control information which judged a priority of control information in view of each generation information given to said two or more control information, and was judged that a priority is high, and said storage parts store.
[Claim 12]A control section which transmitted compensation information which control information created compensation information which shows that it was used by said analysis step, and was created to a control section which transmitted said control information, and transmitted said control information analyzes received compensation information, Claim 9 storing the analysis result in said storage parts store, a process process control method given in either 10 or 11.

[Translation done.]

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention]This invention relates to the process process control system and process
process control method which control the process condition gradually to the processing unit which
constitutes a process process.
[0002]
[Description of the Prior Art]In the process process of plants, such as the former, a liquid crystal panel,
and a semiconductor, For yield stabilization of a processing unit, reduction of test wafers, etc., the
technique of controlling a process condition and what is called MBPC (Model Based Process Control)
were used feedforward / by feeding back in the processing result of the processing unit.
[0003]For example, in the conventional process process control system. As shown in drawing 6, in order
to correspond to the process unit 11, a temporal change of the raw material 13, etc., it resets so that
the parameter of the model formula set up for every process unit may become the optimal with
reference to the inspection result obtained with the inspection machine 15, and model formulas are
adjusted all at once to all the process units. Via the process control terminal 17, it is more specifically
sent to the factory administration server 19 by the inspection result obtained with the inspection
machine 15, and this factory administration server 19, It asks for an adjusted part of the parameter of
the model formula set as each process unit using the inspection result and the processing database 21
which were sent from the process control terminal 17, and sends to the process control terminal 17.
The process control terminal 17 sends the information or value sent from the factory administration
server 19 to the control section 23 which controls to the process unit 11. Each control section changes
the parameter of the model formula set as the process unit used as a group.
[0004]
[Problem(s) to be Solved by the Invention]However, in the above-mentioned conventional process
process control system. Since it is based on the parameter change of the model formula set as each
process unit and also the determination of the parameter which the influence on a process unit is not
taken into consideration, or took into consideration the influence on other process units is very difficult,
In the case of a complicated process and new process, about the relation between process units within
a process, the grasp is dramatically difficult. Therefore, trial and error, such as changing a parameter
repeatedly, by the time it produces the product where quality was stabilized, needed to be repeated, and
there was a problem that quality stabilization of the whole line will take time. When changing a model
formula, the intuition of accumulation data and a process technology person has also been used
conventionally, but it is difficult for the burden to an engineer individual to be heavy and to correspond
promptly also to change by such a technique.
[0005]A state may change, respectively with lapsed time after it generally changes the optimal process
condition at the time of performing process processing treatment by an environmental variation, aging of
a process unit, etc. and the raw material by which process processing treatment is carried out also
receives the difference in a processing history or raw material and processing which the raw material
received etc. For this reason, in order to stabilize the quality of the product promptly, it is necessary to
control a process condition suitably according to each process unit, each raw material, and a situation.
That is, it must change at any time so that the parameter of the model formula set as the process unit

may become the optimal.

[0006]Since the inspection result obtained with the inspection machine 15 is intensively processed by the factory administration server 19, if a parameter increases, the load of the factory administration server 19 will become large, and processing time will become long. For this reason, the factory administration server 19 needs to have the resource and throughput of high spec.

[0007]Generally in the liquid crystal panel or the semiconductor, deployment of the basic factory is performing same production at two or more plants in many cases. However, there was a problem that suitable management could not be immediately performed even if the yield gets worse at two or more processes of being in the distant place unless the number of the engineers who adjust the process condition of a process unit is enough.

[0008]This invention is made in view of the problem and situation of the above-mentioned former, and an object of this invention is to provide the process process control system and process process control method which can be shortened substantially for the quality stable period of the whole process, attaining yield stabilization. The process technology person also makes it the purpose for a small number of people to also provide two or more process process control systems and process process control methods in a remote place which can manage a process process.

[0009]

[Means for Solving the Problem]In order to solve an aforementioned problem, a process process control system concerning this invention, A process unit with which a process condition according to a raw material was set up, and two or more sets of control sections which control a process condition set as said process unit are provided, respectively, Control sections are the process process control systems connected by communication line, When said control section points to change of a process condition to a pair of process unit, transmit to other predetermined control sections of a pair of, and control information about said process condition said predetermined control section, Based on received control information, it directs to change a process condition to a pair of process unit. Therefore, a quality stable period of the whole process can be shortened substantially, attaining yield stabilization, even if it is a complicated process.

[0010]A process process control system concerning this invention, When said control section receives control information from a storage parts store which memorized data about a state of a process unit, and data about setting out of a process condition, and other control sections, Analyzing parts which analyze a suitable process condition for a process unit used as a group using data memorized by control information concerned and said storage parts store, A process condition acquired by analyzing by said analyzing parts is compared with data memorized by said storage parts store, Said process condition has a simulation part which calculates an influence degree in said a pair of process unit, and said analyzing parts generate control information including optimal process condition, after optimizing said process condition based on a calculation result of said simulation part.

[0011]A process process control system concerning this invention, When transmitting control information to other control sections, said control section generates generation information expressed using course information which shows the number of control sections via which order information which shows order relation of said control section, and a control section besides the above, and said control information went, and gives the generation information concerned to said control information.

[0012]A process process control system concerning this invention, When said control section receives two or more control information to which generation information was given, said analyzing parts, A process condition is analyzed using data memorized by control information which judged a priority of control information in view of each generation information given to said two or more control information, and was judged that a priority is high, and said storage parts store. Therefore, even if a control section receives two or more control information, the optimal control information for using can be chosen one from plurality.

[0013]Said control section has a compensation information preparing part which creates compensation information which shows that control information was used by said analyzing parts, and a process process control system concerning this invention transmits compensation information created by said compensation information preparing part by control section which transmitted said control information.

[0014]Compensation information from which said control section received a process process control system concerning this invention is analyzed, and it has compensation information analyzing parts which

store the analysis result in said storage parts store. therefore -- an example is taken [whether control information was used and], in order that analyzing parts and a simulation part may also use an analysis result of compensation information and may perform analysis and a simulation -- a process condition -- analysis -- and a simulation can be carried out.

[0015]A process process control system concerning this invention is provided with a factory administration server which manages said control section, and said factory administration server is mutually connected by a factory administration server and a communication line which are provided in other process process control systems. Therefore, even if it obtains with process technology persons and is a small number of people, two or more process processes in a remote place are efficiently manageable.

[0016]A process process control method concerning this invention, When it is a process process control method with which a control section manages a process unit with which a process condition according to a raw material was set up, and said control section points so that a process condition may be changed to a pair of process unit, It has a control information transmission step which transmits control information about said process condition to a predetermined control section of other groups, and a process condition changing instruction step directed that said predetermined control section changes a process condition to a pair of process unit based on received control information.

[0017]A process process control method concerning this invention, An analysis step which analyzes a process condition using data in which said control section receives control information from other control sections, and is memorized by control information concerned and said storage parts store in control information transmitted by said control information transmission step, A simulation step which calculates an influence degree in a process unit with which said process condition serves as said group using data memorized by a process condition acquired as a result of analyzing, and said storage parts store, After optimizing said process condition based on a calculation result, it has a control information generation step which generates control information including optimal process condition.

[0018]A process process control method concerning this invention, said control information transmission step -- said control section -- said -- others -- control information which generated generation information expressed using course information which shows the number of control sections via which order information which shows order relation with a control section, and said control information went, and gave generated generation information to said control information is transmitted to other control sections.

[0019]A process process control method concerning this invention, When said control section receives two or more control information to which generation information was given, said analysis step, A suitable process condition is analyzed using data memorized by control information which judged a priority of control information in view of each generation information given to said two or more control information, and was judged that a priority is high, and said storage parts store.

[0020]A process process control method concerning this invention, A control section which transmitted compensation information which control information created compensation information which shows that it was used by said analysis step, and was created to a control section which transmitted said control information, and transmitted said control information analyzes received compensation information, and stores the analysis result in said storage parts store.

[0021]
[Embodiment of the Invention]About the embodiment of the process process control system of the following and this invention [A 1st embodiment] **[A 2nd embodiment] **With reference to Drawings, it explains in detail in order of [a 3rd embodiment]. The process process control system of the embodiment explained below adjusts the process condition gradually by [which constitute a process process] performing a simulation for every process unit and performing feedforward or feedback between each process unit.

[0022][A 1st embodiment] Drawing 1 is a block lineblock diagram showing the process process control system concerning a 1st embodiment of this invention. In the figure, the process process control system of this embodiment, Control-section *1105 corresponding to the process unit 101 (101a-101d), the inspection machine 103, and each process unit 101 and the inspection machine 103 (105a-105e), It has the internal networks (communication line) 107, such as LAN currently built inside the factory, and the factory administration server 111 in which the processing database 109 was formed, and is

constituted. As shown also in drawing 1, the process unit 101a and the control section 105a are a pair (group), Similarly, the process unit 101b, the control section 105b and the process unit 101c, the control section 105c and the process unit 101d, the control section 105d and the inspection machine 103, and the control section 105e are a pair (group).

[0023]Hereafter, each component which the process process control system of this embodiment has is explained. First, by performing process processing treatment to the raw material 113, the product 115 is made to the process unit 101 and it is controlled by the control sections 105a-105d used as a group. The process unit 101 performs process processing treatment by the process condition set up by the model formula showing processing time, treatment temperature, process pressure, etc. The inspection machine 103 inspects the completed product 115, and is controlled by the control section 105e like the process unit 101.

[0024]The control section 105 performs control and information management of the process unit 101 or the inspection machine 103. Especially the control sections 105a-105d analyze a suitable process condition based on the control information sent from other control sections, and by carrying out the simulation of this, they are based on the actual condition, and it depends for them, and they set up a suitable process condition. The control sections 105a-105d set up the process condition of the process unit (henceforth a "self-device") used as a group, and do not set up the process condition of other not corresponding process units. Optimization of a process condition is performed by [of the model formula set as the process unit] changing especially a parameter.

[0025]The control section 105 sends feedforward control information (FF) including the process condition acquired by analyzing and carrying out a simulation to the control section of the next step. The control section of the next step which received feedforward control information (FF), After analyzing a process condition based on this information, a simulation is carried out, and the feedforward control information (FF) which includes the process condition acquired by analyzing and carrying out a simulation like the control section of the preceding paragraph is sent to the control section of the stage one after another.

[0026]Thus, as the control section 105 has set up the process condition of a self-device using the feedforward control information (FF) sent from the control section of the preceding paragraph and it is shown in drawing 2, It has the control information receive section 201, the control information judgment part 203, the analyzing parts 205, the simulation part 207, the control information transmission section 209, and the storage parts store 211, and is constituted.

[0027]The device-status database (device status DB) 213 which is storing data concerning [the storage parts store 211] the state of the process unit 101, It comprises the setting database (setting out DB) 215 which is storing the data about setting out of the preset value of process conditions, such as a maximum by what kind of process condition it should be processed, and a minimum, process processing order, etc. The contents of the data stored in these [DB] are suitably updated by the input part 219 via the input control part 217.

[0028]Hereafter, each component of the control section 105 is explained more to details using drawing 2. First, the control information receive section 201 receives the feedforward control information sent from the control section of the preceding paragraph, and sends said feedforward control information to the control information judgment part 203 mentioned later. The control information judgment part 203 makes a judgment about whether the feedforward control information received by the control information receive section 201 deserves use by the following analyzing parts 205 based on a predetermined rule, and sends only the feedforward information which deserves use to the analyzing parts 205. For example, when feedforward control information includes the numerical value about an adjusted part of the parameter of a model formula, it judges whether the control information judgment part 203 has this figure in the setting range which the data of setting-out DB215 shows, and only when it is in within the limits, this figure is sent to the analyzing parts 205.

[0029]The analyzing parts 205 analyze the process condition of the suitable model formula for a self-device from the feedforward control information judged that analysis is required by the control information judgment part 203, and the data stored in device-status DB213 and setting-out DB215 of the storage parts store 211. However, in the simulation part 207, the simulation of the process condition analyzed by the analyzing parts 205 is carried out, and the analyzing parts 205, After optimizing a process condition based on a simulation result, the control information included the optimal process

conditions, such as a numerical value about an adjusted part of a parameter, is generated, and this control information is sent to the controller and the control information transmission section 209 of a self-device.

[0030]The simulation of the simulation part 207 is carried out using the data stored in device-status DB213 and setting-out DB215 of the storage parts store 211 about how the process condition set up by the analyzing parts 205 influences in a self-device. When it is better to change the process condition set up by the analyzing parts 205 as a result of carrying out a simulation, the changed process condition is sent to the analyzing parts 205.

[0031]The control information transmission section 209 transmits the control information sent from the analyzing parts 205 to the control section 105 of the next step. According to this embodiment, since drawing 1 is referred to, although the control information generated by the control section is sent to the control section of the next step, it may be transmitted to the stage, the control section after it, the preceding paragraph, or the control section before it one after another not only in the next step. However, the destination of control information is beforehand set up for every control section.

[0032]In this Description, the control information transmitted to the next step or the control section after it was called "feedforward control information", and the control information transmitted to the preceding paragraph or the control section before it is called "feedback control information." And the word "control information" is used as a thing containing two, feedforward control information and feedback control information. Although it is explained that the feedforward control information sent from the control section of the preceding paragraph is received, if the control information receive section 201 is the control information transmitted from the control section even if it is which process, it can receive this.

[0033]Next, operation of the process process control system of this embodiment is explained. First, the control information receive section 201 of the control section 105 receives the control information transmitted from other control sections. Next, in the control information judgment part 203, a judgment about whether the control information which the control information receive section 201 received deserves using by the analyzing parts 205 is made based on a predetermined rule. The control information judged to deserve using is sent to the analyzing parts 205.

[0034]Next, the analyzing parts 205 analyze the process condition of the model formula set as the self-device from control information and the data stored in the storage parts store 211, and set up the process condition newly set up to a self-device. Next, the simulation of the simulation part 207 is carried out using the data stored in the storage parts store 211 about how the process condition set up by the analyzing parts 205 influences in a self-device.

[0035]Next, the analyzing parts 205 generate the control information included the optimal process conditions, such as a numerical value about an adjusted part of a parameter, also in view of the result of the simulation in the simulation part 207, and send this control information to the controller and the control information transmission section 209 of a self-device. The control information transmission section 209 transmits control information to the predetermined control section 105. Therefore, the same step as the above is performed in other control sections which received this control information.

[0036]As explained above, in the process process control system and process process control method of this embodiment. By using the control information sent from the control section which is other process units and groups, it can be based on the actual condition and the process condition of the model formula set as the process unit can be changed into a more suitable thing. Since especially optimization of this process condition is gradually performed feed-forward control and by carrying out feedback control between process units, according to an environmental variation, aging of a process unit, etc., stabilization of quality is realizable in a short time. Since processing of the analysis for changing a process condition, a simulation, etc. is performed by each process unit, a very high thing is not required of the throughput of the factory administration server 111.

[0037][A 2nd embodiment] In the 1st process process control system and process process control method of an embodiment, the control information on contents which are different from two or more control sections may be transmitted to one control section on the relation to which the destination of control information is set beforehand. For example, the control information "raise 5 ** of parameters of the model formula of treatment temperature", If a control section receives the control information "similarly raise 2 ** of parameters of the model formula of treatment temperature", a what [may adopt

which control information], or seal exception may not attach a control section, but it may perform control from which it separated from the original control intention.

[0038]In the process process control system of a 2nd embodiment, in order to avoid such a situation, the generation information according to process processing order is given to control information. In details, more the control information transmission section 209 of the control section 105, The order information E which shows in the control section and what kind of order relation of a transmitting agency the control section which is a transmission destination of control information is using setting-out DB215 which is storing the data about process processing order (for example, one-step beyond, two-step beyond, and one step before etc.). The generation information GP including the course information I which shows whether how many control sections control information went from the sending agency is given to control information. The generation information GP is expressed by the following formulas (1).

[0039]
[Equation 1]

$$GP = \sum_{i=1}^{k} (Ei \times Ii) \quad \cdots (1)$$

[0040]When the control information receive section 201 receives two or more control information, in the control section 105 of this embodiment the control information judgment part 203, When there is two or more control information which judged about whether the same processing as a 1st embodiment, i.e., control information, deserves use by the analyzing parts 205 to each control information, and was judged to deserve use, two or more of the control information is passed to the analyzing parts 205. The analyzing parts 205 judge the priority of control information in view of the generation information given to each. According to this embodiment, it is judged that a priority is high, so that the value of the generation information GP is small.

[0041]For example, a case where feedforward control information is transmitted to the control section 105c which is the process unit 101c and a group from the control section 105b, and feedback control information is transmitted to it from the control section 105d like an example shown in drawing 3 is considered. The generation information GP (=EbxI2) by which the analyzing parts 205 of the control section 105c are given to feedforward control information FF from the control section 105b, The generation information GP (=EdxI3) given to the feedback control information FB from the control section 105d is compared, and control information to which numerical small generation information is given is judged that a priority is high.

[0042]Next, control information is generated, after analyzing using device-status DB213 and setting-out DB215 of control information and the storage parts store 211 to which generation information judged that the analyzing parts 205 have the highest priority was given and performing a simulation like a 1st embodiment.

[0043]Therefore, in a process process control system and a process process control method of this embodiment. Even if the control section 105 receives two or more control information, a process condition of a model formula set as a self-device using any one control information can be analyzed, a simulation can be carried out, or control information can be generated.

[0044]Since a priority is given when a numerical value of each generation information GP given to two or more control information, respectively is the same, For example, set up a priority highly, so that a process processing stage is near, or make it high to control information from a predetermined control section, or. A standard which is set up so highly that there are few courses of a control section, is made higher to feedforward control information than to feedback control information, or is set up so highly that an adjusted part of a parameter is large may be established.

[0045][A 3rd embodiment] In a process process control system and a process process control method concerning a 3rd embodiment. When control information transmitted to other control sections is used in the analyzing parts 205 of a control section of a transmission destination for analysis, a simulation, and control information generation, it has sent to a control section of transmitting [compensation information which shows that control information was used] origin.

[0046]More, as shown in drawing 4, the compensation information preparing part 401 for creating

compensation information sent to a control section which is transmitting [control information] origin besides a component which the 1st or 2nd control section 105 has is formed in control-section 105' of this embodiment at details. The compensation information preparing part 401 creates compensation information, when control information is used by the analyzing parts 205. Information created by the compensation information preparing part 401 is sent to a control section of a transmitting agency from the control information transmission section 209.

[0047]The control information receive section 201 which control-section 105' of this embodiment has also receives compensation information sent from the control information transmission section 209. The compensation information analyzing parts 403 for analyzing compensation information are formed in the control section 105 of this embodiment, and compensation information received in the control information receive section 201 is sent to the compensation information analyzing parts 403. The compensation information analyzing parts 403 analyze compensation information, and store the result in setting-out DB215 of the storage parts store 211.

[0048]Therefore, in a process process control system and a process process control method of this embodiment. In order that the analyzing parts 205 and the simulation part 207 may also use an analysis result of compensation information accumulated in setting-out DB215 and may perform analysis and a simulation especially, In view of whether control information was used, a process condition of a monitor type set as a self-device can be analyzed, a simulation can be carried out, or control information can be generated.

[0049]In a process process control system concerning the 1st explained above - a 3rd embodiment. Since the factory administration server 111 is not connected to a communication network (communication line) of the factory exterior, a process technology person, When it became a situation where it had to be coped with [get worse / at a certain factory / a yield], it was difficult to go to the factory, or to hear a situation in detail, and to perform suitable management immediately.

[0050]However, by connecting the factory administration servers 111a and 111b of two or more factories mutually by the communication networks 501, such as the Internet and a dedicated line, as shown in drawing 5, for example, the process technology person who is in the factory B can peruse a learning result accumulated in a processing database of the factory administration server 111a by accessing the factory administration server 111a of the factory A using the factory administration server 111b. Thus, since a state of a process process control system at a distant place is manageable, even if it obtains with process technology persons and is a small number of people, two or more process processes in a remote place are efficiently manageable.

[0051]In the processing database 109 of the factory administration servers 111a and 111b. Information, including an analysis result etc. which were analyzed by data and the compensation information analyzing parts 403 of a 3rd embodiment which are accumulated in each DB of control information generated by the analyzing parts 205 or the storage parts store 211, is stored via the internal network 107.

[0052]
[Effect of the Invention]As explained above, according to the process process control system and process process control method of this invention, the quality stable period of the whole process can be shortened substantially, attaining yield stabilization.

[Translation done.]

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1]The block lineblock diagram showing the process process control system concerning a 1st
embodiment of this invention
[Drawing 2]The block diagram showing the internal configuration of the control section which the
process process control system of a 1st embodiment has
[Drawing 3]The block lineblock diagram showing the process process control system concerning a 2nd
embodiment of this invention
[Drawing 4]The block diagram showing the internal configuration of the control section which the
process process control system of a 1st embodiment has
[Drawing 5]The block lineblock diagram in which the factory administration server was mutually
connected by the communication network
[Drawing 6]The block lineblock diagram showing the conventional process process control system
[Description of Notations]
101 (a [101]-101d) process units
103 Inspection machine
105 (105a-105e) Control section
107 Internal network
109 Processing database
111 Factory administration server
201 Control information receive section
203 Control information judgment part
205 Analyzing parts
207 Simulation part
209 Control information transmission section
211 Storage parts store
213 Device-status database (device status DB)
215 Setting database (setting out DB)
217 Input control part
219 Input part
401 Compensation information preparing part
403 Compensation information analyzing parts
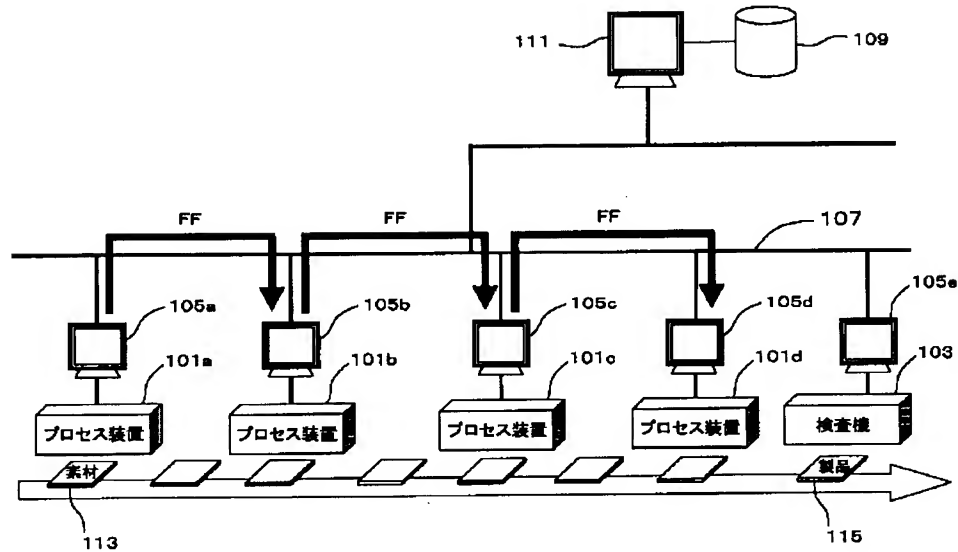501 Communication network

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[Translation done.]

13		14	
２０１	制御情報受信部	＊２１５	設定データベース（設定ＤＢ）
２０３	制御情報判断部	２１７	入力制御部
２０５	解析部	２１９	入力部
２０７	シミュレーション部	４０１	報酬情報作成部
２０９	制御情報送信部	４０３	報酬情報解析部
２１１	記憶部	５０１	通信ネットワーク
２１３	装置状態データベース（装置状態ＤＢ）	＊	

【図１】

【図２】

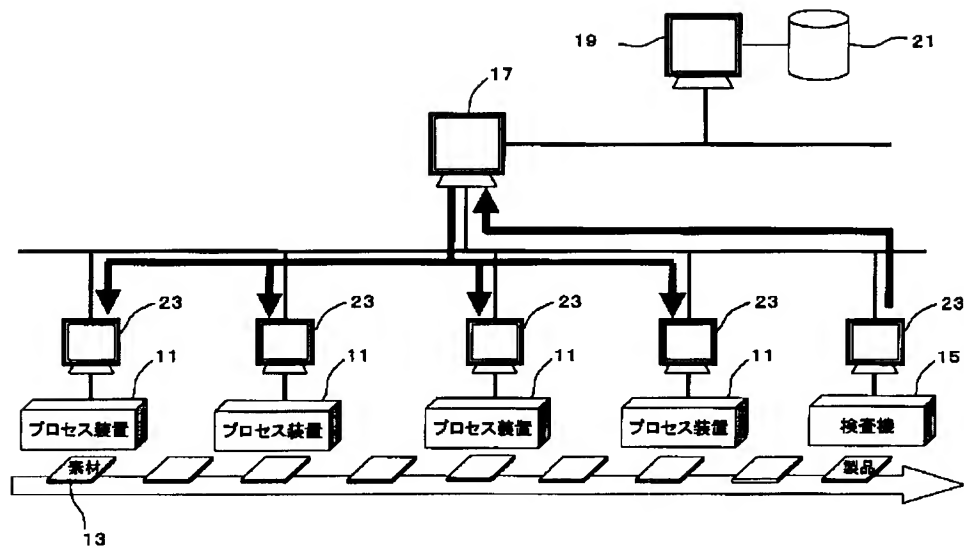【図３】

【図４】

【図５】

【図６】

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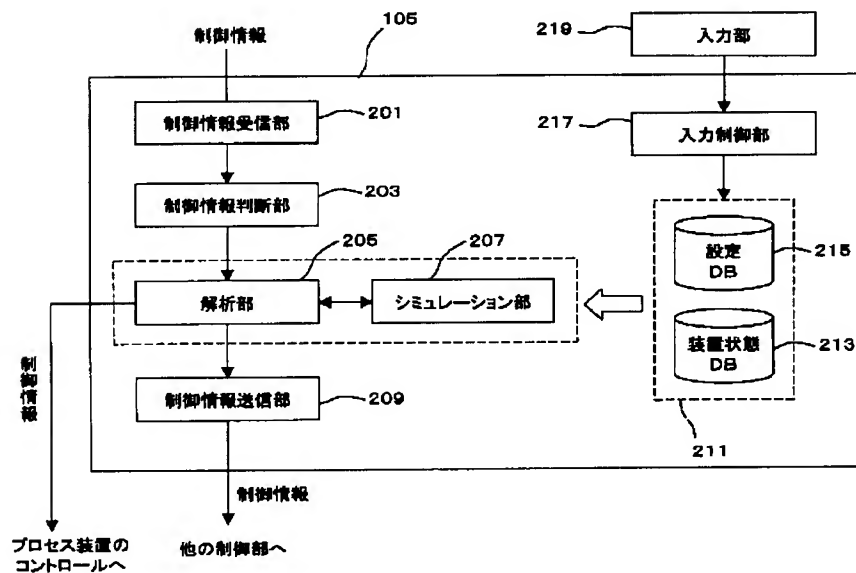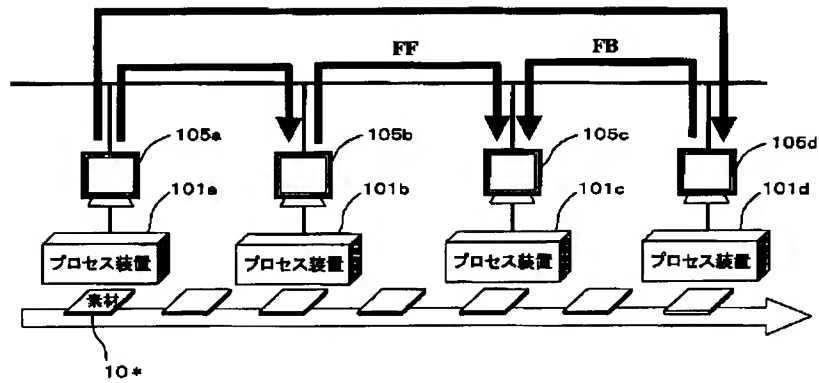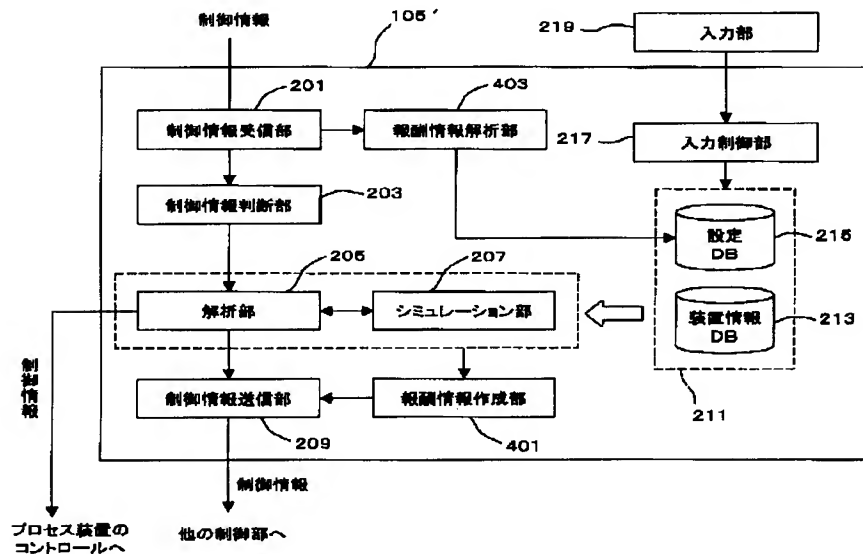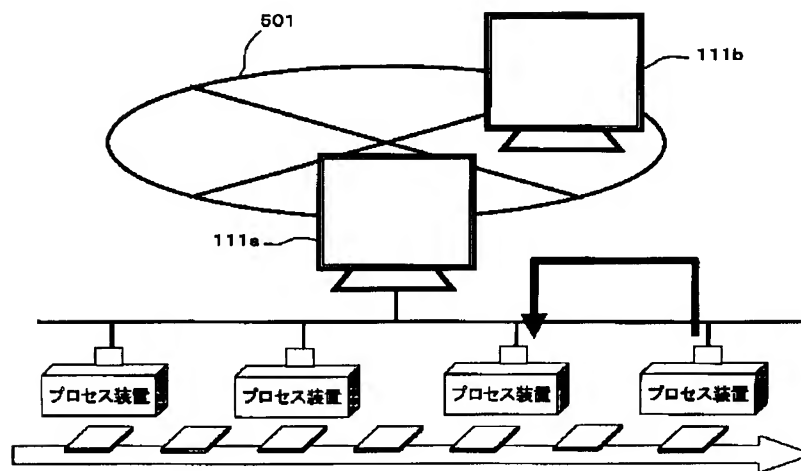
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